

What is Claimed:

1. A control system for a marine vessel, the control system comprising:
a first control lever having an associated operating range; and
a second control lever having an associated operating range;
wherein each of a first engine and a second engine adjusts at least one of a throttle and a shift position in response to a movement of the first control lever within its associated operating range, and wherein a third engine adjusts at least one of a throttle and a shift position in response to a movement of the second control lever within its associated operating range.
2. The control system of claim 1, further comprising:
a first electronic control unit (ECU) that controls at least one of the throttle of the first engine and the shift position of the first transmission based on a position of the first control lever within its operating range;
a second ECU that controls at least one of the throttle of the second engine and the shift position of the second transmission based on the position of the first control lever; and
a third ECU that controls at least one of the throttle of the third engine and the shift position of the third transmission based on a position of the second control lever within its operating range.
3. The control system of claim 2, wherein
the first ECU provides via a communications link a information that represents the current position of the first control lever within its operating range; and
the second ECU receives the information via the communications link, and controls at least one of the throttle of the second engine and the shift position of the second transmission based on the received information.
4. The control system of claim 2, wherein each of the ECUs is electrically connected to a respective corresponding shift actuator and to a respective corresponding throttle actuator.
5. The control system of claim 4, wherein each of the ECUs provides a respective actuator drive current to a respective motor in each of the corresponding shift actuators and throttle actuators.

6. The control system of claim 4, wherein each of the shift actuators and throttle actuators includes a respective actuator rod, and wherein actuator rod position feedback signals are carried to the respective ECUs from respective rod position sensors.
7. The control system of claim 4, wherein each shift actuator is electro-mechanically coupled to a corresponding transmission.
8. The control system of claim 4, wherein each shift actuator actuates the shift position of the corresponding transmission by moving a respective shift actuator rod into one of a number of predefined positions.
9. The control system of claim 4, wherein each throttle actuator is electro-mechanically coupled to a corresponding engine.
10. The control system of claim 9, wherein each throttle actuator actuates the throttle of the corresponding engine by moving a respective throttle actuator rod into one of a number of predefined positions.
11. The control system of claim 1, further comprising:
a control lever position sensor that senses the current position of the control lever within its operating range.
12. The control system of claim 11, wherein the control lever position sensor includes a potentiometer.
13. The control system of claim 1, further comprising:
first arm position means coupled to the first control lever for providing a first electrical signal that represents a position of the first control lever within its operating range,
wherein the first ECU receives the electrical signal, and controls the throttle of the first engine and shift position of the first transmission based on the electrical signal.
14. The control system of claim 13, wherein the first ECU determines, from a voltage level of the first electrical signal, the current position of the first control lever.

15. The control system of claim 14, wherein the first ECU causes shift and throttle actuator rods to be set based on the current position of the control lever.
16. The control system of claim 15, wherein the first ECU further comprises a first ECU memory that contains a conversion table from which the first ECU can determine respective positions to which the shift and throttle actuator rods should be set.
17. A control system for a marine vessel having first, second, and third marine engines, the control system comprising:
 - a first control lever having an associated operating range; and
 - a second control lever having an associated operating range;wherein each of the engines adjusts a respective throttle in response to a movement of at least one of the control levers within its associated operating range.
18. The control system of claim 17, wherein the marine vessel has first, second, and third transmissions, and wherein each of the transmissions adjusts a respective shift position in response to a movement of at least one of the control levers within its associated operating range.
19. The control system of claim 17, further comprising:
 - a first engine control unit (ECU) electrically coupled to the first control lever and the first engine;
 - a second ECU electrically coupled to the second control lever and the second engine; and
 - a third ECU communicatively coupled to the first and second ECUs and electrically coupled to the third engine;wherein the first ECU controls the throttle of the first engine based on a position of the first control lever within its operating range, the second ECU controls the throttle of the second engine based on a position of the second control lever within its operating range, and the third ECU controls the throttle of the third engine based on at least one of the position of the first control lever and the position of the second control lever.
20. The control system of claim 18, further comprising:
 - a first engine control unit (ECU) electrically coupled to the first control lever and the first transmission;
 - a second ECU electrically coupled to the second control lever and the second transmission; and

a third ECU communicatively coupled to the first and second ECUs and electrically coupled to the third transmission,

wherein the first ECU controls the shift position of the first transmission based on a position of the first control lever within its operating range, the second ECU controls the shift position of the second transmission based on a position of the second control lever within its operating range, and the third ECU controls the shift position of the third transmission based on at least one of the position of the first control lever and the position of the second control lever.

21. The control system of claim 17, further comprising:

a first engine control unit (ECU) electrically coupled to the first control lever and the first engine;

a second ECU electrically coupled to the second control lever and the second engine; and

a third ECU communicatively coupled to the first and second ECUs and electrically coupled to the third engine;

wherein the first ECU controls the throttle of the first engine based on a position of the first control lever within its operating range, the second ECU controls the throttle of the second engine based on a position of the second control lever within its operating range, and the third ECU controls the throttle of the third engine based on information received from at least one of the first ECU and the second ECU.

22. The control system of claim 18, further comprising:

a first engine control unit (ECU) electrically coupled to the first control lever and the first transmission;

a second ECU electrically coupled to the second control lever and the second transmission; and

a third ECU communicatively coupled to the first and second ECUs and electrically coupled to the third transmission,

wherein the first ECU controls the shift position of the first transmission based on a position of the first control lever within its operating range, the second ECU controls the shift position of the second transmission based on a position of the second control lever within its operating range, and the third ECU controls the shift position of the third transmission based on information received from at least one of the first ECU and the second ECU.

23. The control system of claim 17, further comprising:

an engine control device operable to selectively engage and disengage any of the first, second, and third engines.

24. The control system of claim 18, further comprising:

an engine control device operable to selectively engage and disengage any of the first, second, and third transmissions.

25. The control system of claim 19, wherein at least one of the engines is an electronic engine, and wherein the ECU that is coupled to the electronic engine controls the throttle of the electronic engine by providing at least one of an analog voltage signal and a digital data packet to the electronic engine.

26. The control system of claim 20, wherein at least one of the transmissions is an electronic transmission, and wherein the ECU that is coupled to the electronic transmission controls the shift position of the electronic transmission by providing at least one of an analog voltage signal and a digital data packet to the electronic transmission.

27. An engine control device for a marine vessel, the device comprising:

a plurality of switches, each said switch being operable to engage and disengage a respective power train; and

a plurality of engagement indicators, each said engagement indicator being associated with a respective power train and indicating whether its associated power train is engaged or disengaged.

28. The engine control device of claim 27, wherein each of the switches is electrically connected to a first electronic control unit (ECU) that is adapted to cause the power train associated with a selected switch to engage and disengage.

29. The engine control device of claim 28, wherein the first ECU is communicatively coupled to a plurality of other ECUs, and wherein each of the other ECUs is adapted to cause a respective associated power train to engage and disengage.

30. The engine control device of claim 29, wherein the first ECU transmits a message to at least one of the other ECUs to cause the power train associated with the selected switch to engage or disengage.

31. The engine control device of claim 27, wherein each of the switches is operable to cause a respective transmission to move to a neutral shift position.
32. The engine control device of claim 27, wherein each of the switches is operable to cause a respective engine to move to an idle throttle.
33. The engine control device of claim 27, wherein each of the switches is operable to cause a respective engine to move to an idle throttle and a respective transmission to move to a neutral shift position.
34. The engine control device of claim 27, wherein the switches are momentary switches.
35. The engine control device of claim 27, wherein the switches are toggle switches.
36. The engine control device of claim 27, wherein the indicators include light emitting diodes.
37. A method for controlling a marine vessel, the method comprising:
determining a first gear position associated with a first transmission;
determining a second gear position associated with a second transmission; and
controlling a third transmission based on the first and second gear positions.
38. The method of claim 37, wherein controlling the third transmission comprises causing the third transmission to be set to a neutral position if the first gear position is different from the second gear position.
39. The method of claim 38, further comprising causing an engine associated with the third transmission to be set to an idle throttle.
40. The method of claim 37, wherein controlling the third transmission comprises disengaging the third transmission if the first transmission is in a forward position and the second transmission is in a reverse position.
41. The method of claim 37, wherein controlling the third transmission comprises causing the third transmission to be set to a gear position that is the same as the first gear position.

42. The method of claim 37, further comprising:
determining a throttle position of an engine associated with the first transmission; and
causing an engine associated with the third transmission to be set to a throttle position that is the same as the throttle position of the engine associated with the first transmission.
43. The method of claim 37, wherein controlling the third transmission comprises causing the third transmission to be set to a reverse position and setting a throttle of an engine associated with the third transmission to a throttle that is the same as a throttle to which an engine associated with the second transmission is set, if the first transmission is in a forward position and the second transmission is in a reverse position.
44. The method of claim 37, further comprising:
causing the third transmission to be set to a gear position that is the same as the first gear position and setting the throttle of the engine associated with the third transmission to a throttle that is the same as a throttle to which an engine associated with the first transmission is set, unless the first transmission is in a forward position and the second transmission is in a reverse position.
45. The method of claim 37, wherein controlling the third transmission comprises disengaging the third transmission if either the first or second gear position is a neutral position.
46. The method of claim 37, further comprising:
receiving a docking mode indicator that identifies a manner for controlling the third transmission based on the first and second gear positions.
47. In a control system for a marine vessel comprising a first electronic control unit (ECU) that controls at least one of a throttle of a first engine and a shift position of a first transmission, and a second ECU that controls at least one of a throttle of a second engine and a shift position of a second transmission, a method comprising:
disengaging at least one of the first engine and the first transmission; and
after disengaging said first engine or first transmission, providing to the second ECU data that represents at least one of a current shift position of the second transmission and a current throttle of the second engine.